Case #3

1. **Brown induration of the lung.** The tissue is brown in the cut, the parenchyma is dense. **Causes:** disturbance of blood outflow from lungs in pulmanary veins. Such changes appear under: 1) the defects of heart, 2) myocarditis, 3) ischemic disease of the heart. Stagnation is observed in the lungs, imbibition of the parenchyma by hemosiderin and expansion of the connective tissue. **Outcomes:** the function is decreased, inflammation.

2. **Nutmeg liver. Primary stage** (hepar muscatum simplex and h.m. adiposum), the liver is enlarged, infirm, yellow-brown with numerous dark-red spots on the surface and in the cut extended and overfilled central veins with diapedesis of blood off the vascular wall. Yellow colour and infirmity are explained by fatty dystrophy. **Causes:** hypoxia.

3. **Shock kidney.** The pale cortical layer and the dark-blue plethoric medullary one are seen. Such changes appear under shock conditions. Profound disturbances of blood circulation in internal organs. Morphological changes: there is ischemia in the cortical layer, spasms of arteries, plethora in the medullary layer. **Outcomes:** death from acute renal failure.

4. **Hemopericardium.** Accumulation of blood is seen that press the heart. Besides there is altered structure of cardiac muscle with its destruction. **Causes:** rupture of the heart wall or disturbance of cardiac muscle by knife. **Outcomes:** sudden death.

5. **Hemorrhage into the brain stem.** Hemorrhage into the brain stem with its destruction (hematoma) is seen. **Causes:** (hemorrhage-per rhexin) rupture of the wall of artery is observed under atherosclerosis, hypertension (hemorrhage per diabrosin) arrosion of the vessel wall-under tumorous processes. **Outcomes:** lethal.

6. **Hemorrhage into the area of IV ventricle of the cerebrum and subarachnoidal hemorrhages.** Accumulation of blood in the area of IV ventricle and stroma of the cerebrum. **Causes:** (hemorrhage per rhexin) rupture of the artery wall is observed under atherosclerosis, hypertension (hemorrhage per diabrosin) arrosion of the wall of the vessel under the tumorous processes. **Outcomes:** lethal, blood pressure on the vital important centres of the rhomboid foveola.

7. **Hemorrhagic pneumonia.** The lung is dark-red with numerous hemorrhages, dense. This is the example of inflammative hyperemia, which often occurs under virus infections (influenza) morphologically: imbibition by erythrocytes in tissue. **Outcomes:** lethal with the development of pulmonary and cardiac insufficiency.

8. **Metastasises of the cancer of the stomach into the liver.** Numerous foci of grey colour and various diameter, which set out the surface of the liver. This is an example of the tissue embolism, the structures of stomach tumor get into the liver by the system of the portal vein.
10. **Apostematous pyelonephritis.** The lung is enlarged, infirm, grey and motley. The foci of pale-grey colour (d=0.2 - 0.8 cm) are seen. These are abscesses under the capsule. Embolism of microorganisms takes place, when microorganisms spread in the organism hematogenic (kidney) under sepsis.

11. **Thromboembolism of the pulmonary artery.** It is seen the thrombus of red colour which is unrestrictedly situated in the place of bifurcation of the pulmonary artery and fills in the lumen completely. **Causes:** 1) avulsion of the thrombus from the veins of the inferrior extremities under their varicosis. 2) thrombus from the vessels of the small pelvis organs after operations. 3) stagnated thrombuses under chronic cardiac insufficiency. **Outcomes:** 1) pulmonary infarction. 2) death from pulmo-coronar shock. The mechanism of death: in the result of the irritation of baroreceptors in the area of pulmonary artery the reflex spasm of small branches of the pulmonary artery, coronary artery and small bronchuses appears.

13, 40. **Cyanotic induration of the kidney (venous plethora of the kidney).** The kidney is enlarged and dark-blue as a result of the stagnation of venous blood in the kidney. **Causes:** 1) thrombosis of kidney veins. 2) general venous plethora, occurred under: chronic myocarditis, endocarditis, ischemia, diseases of the organs of respiration. Under cyanotic induration the expasion of the connective tissue and the induration of the organ is observed.

14, 25. **Thromboembolism of the pulmonary artery.** The lung tissue is dark-red and dense. The colouring is explained by the development of the red pulmonary infarction. An example of vascular necrosis - red colouring appears in the result of hemorrhage into the area of necrosis under small damages, development of pneumonia before infarction, death.

15. **Hemorrhage into the lateral ventricles.** In the lateral ventricle of the cerebrum the accumulation of blood is seen. Such hemorrhages happen under the rupture of the cerebral artery during the hypertensive attack. **Outcomes:** death.

16. **Hydronephrosis.** An example of the the disturbance of the fluid contents in tissues. The enlargement of pelvises is seen, it appeared in the result of the accumulation of urine under the obstructing of the ureter by a stone. **Outcome:** renal insufficiency.

17. **Aneurysm of the big popliteal vein with the following thrombosis.** It is seen: the sack looking formation d=10cm. Thrombus-dilators are often formed in such aneurysms, they may be the source of thromboembolism of the renal artery.

18. **White infarction of the kidney.** The area of triangular form of grey colour is seen in the cut, it’s lxl,5cm in size - this is the white infarction. It takes place under the making of thrombus by the atherosclerotic patch in the small branch of renal artery. **Outcomes:** the...
area of necrosis is replaced by the connective tissue and a cicatrix appears in this place with a hollow.

19. Hemorrhage into the cerebellum. It is seen: the subarachnoid accumulation of blood in the hemispheres of the cerebellum. 
**Causes:** (hemorrhage per rhexit) under the rupture of the cerebellum artery, under the hypertensive attack.

20. Chronic bronchitis with thromboembolism of the small branches of the pulmonary artery. It is seen: the cut of the pulmonary tissue, the extended walls of bronchuses, sclerotic changes of the pulmonary tissue and thrombuses in the lumen of the small branches of pulmonary tissue and thrombuses in the lumen of the small branches of pulmonary artery. The origin of thromboembolism is explained by the lungs and heart pathology with the formation of stagnated thrombuses. They are the source of thromboembolism of pulmonary artery.

21. Hemorrhage into the thyroid gland tumor. The hypertrophic gland to 8cm is seen. The areas of dark-red colour are seen in the cut. 
**Causes:** taking into consideration tumorous process-hemorrhage per diabrosin (arrosion of the artery wall). **Outcomes:** organization or lysis with the formation of cyst.

22. Red softening of the cerebral tissue. Within the cerebrum it is seen the considerable hemorrhage with the destruction of the parenchyma - hemorrhage insulsit, which occurs in the result of the rupture of the vessel wall under the hypertension. **Outcomes:** death.

23. Hematoma of the cerebrum. It is seen in the cut the dark-red area to 2cm in size with the destruction of the cerebral substance - hematoma. 
**Causes:** hemorrhage per rhexit, per diabrosin. 
**Outcomes:** hemorrhage with necrosis (colliquational) that's why lysis of the tissue and formation of capsule with hemosiderin develops.

24. Varicose enlargement of the veins of the mucous membrane of the stomach. It is seen: the enlarged veins in submucous layer and the atrophied mucous membrane. 
**Causes:** disturbance of blood circulation in the liver under portal cirrhosises. Consequently porto-cavalous anastomosis are opened. Hemorrhages often occur from such veins.

26. Parietal thrombuses in the heart cavity. It is seen: the parietal thrombuses in the heart cavity of the left ventricle, in the cut of its wall dark- red areas - focuses of infarction are seen. Parietal thrombuses in the left ventricle often occur after the myocardial infarction and after endocarditis. 
**Outcomes:** thromboembolisms in the systemic circulation with the development of infarctions in different organs.

27, 37. Hemorrhage towards the capsule of the kidney. The limited accumulation of blood under the capsule is seen. 
**Causes:** mechanic obtuse trauma with the rupture of the vessel and accumulation of blood. 
**Outcomes:** organization, lysis with secondary hemorrhage into the extraperitoneal area.

28. Hemorrhage into the suprarenal gland. Infant kidney and suprarenal gland is dark-red in the result of imbibition of the tissue by erythrocytes.
Causes: hemorrhage per diabrosin under the meningococcus infection.
Outcomes: acute suprarenal failure.

29. Parietal thrombus in aorta. The intima of the aorta damaged by atherosclerosis process in seen, the parietal thrombus lies on the surface.
Causes: activation of the tissue thrombokinasa, which sets going the mechanism of the formation of thrombuses.
Outcomes: the avulsion of the thrombus, thromboembolism.

30. Nutmeg liver. Final stage (hepar muscatum crioticans), the liver is decreased, dense on the surface and in the cut it has granularity. The areas of yellow colour and numerous dark red spots are seen. Granularity, tuberosity and density are explained by expension of connective tissue, which appears as a result of hypoxia and destructive changes in hepatocytes.
Causes: 1) chronic cardiac pathology: ischemia, myocarditis, endocarditis. 2) chronic pulmonary pathology with the development of pulmonary heart. 3) thromboses, thrombophlebitises of liver veins.

33. Thrombosis of the aorta. It is seen: deep damage of the wall with atheromatosis and formation of the thrombus, which screens the lumen of the aorta and disturbs the circulation.
Causes: activisation of the tissue thrombokinasa, which sets going the mechanism of the formation of thrombuses.

34. Hemorrhage into the lung. It is seen: under the visceral pleura there is an accumulation of blood without distinctive borders.
Causes: arrosion of the wall vessel which is seen as grey spots d=0,3 - 0,4 cm under the pleura.

35. Subarachnoidal hemorrhage. One can see the accumulation of blood in the soft membranes of the brain in the vascular plexus without distinctive borders.
Causes: hemorrhage per rhexin under the hypertensive attack.

38. Thrombosis of the aorta with recanalization and rethrombosis. It is seen the extended lumen of the aorta, which is filled with mixed thrombus. In the middle of the thrombus one can see the canal. The canal is closed by new red thrombus.